WHAT IS CLAIMED:

1. A frame for an embolic filtering device used to capture embolic debris in a body vessel, the frame comprising:

a proximal strut assembly adapted to move between an unexpanded position and an expanded position; and

a distal strut assembly joined to the proximal strut assembly and adapted to move between an unexpanded position and an expanded position;

wherein the proximal strut assembly includes Beta titanium; and

wherein the distal strut assembly includes Beta titanium.

2. The frame of claim 1, wherein:

the Beta titanium of the proximal strut assembly is Beta III titanium; and

the Beta titanium of the distal strut assembly is Beta III titanium.

3. The frame of claim 2, further comprising a deployment ring, a distal end of the proximal strut assembly being coupled to the deployment ring, a proximal end of the distal strut assembly being coupled to the deployment ring, and the deployment ring configured to move between the unexpanded position and the expanded position.

4. The frame of claim 3, the proximal strut assembly including two self-expanding struts which move between the unexpanded position and the expanded position.

5. The frame of claim 3, the distal strut assembly including a plurality of self-expanding struts coupled to the deployment ring.

6. The frame of claim 5, further comprising a filtering element coupled to the distal strut assembly.

7. The frame of claim 3, further comprising a filtering element coupled to the deployment ring.

8. The frame of claim 3, wherein the proximal strut assembly includes a plurality of self-expanding struts which move between the unexpanded position and the expanded position, the deployment ring being coupled to a distal end of each of the self-expanding struts.

9. The frame of claim 8, wherein the deployment ring includes an undulating pattern of peaks and valleys.

10. The frame of claim 9, further comprising:

a filtering element coupled to the deployment ring, the filtering element having an opening for receiving embolic debris, the opening of the filtering element having the same undulating pattern as the deployment ring.

11. The frame of claim 2, further comprising a filtering element coupled to the distal strut assembly.

12. An embolic filtering device disposed on a guide wire and used to capture embolic debris in a body vessel, comprising:

an expandable filter assembly including a self-expanding frame having a proximal strut assembly, a distal strut assembly and a deployment ring disposed between and coupling the proximal strut assembly and the distal strut assembly, the distal strut assembly having a filter element coupled thereto, the self-expanding frame including Beta titanium, the expandable filter assembly being adapted to move between an unexpanded position and an expanded position; and

means for mounting the expandable filter assembly to the guide wire.

13. The embolic filtering device of claim 12, wherein the Beta titanium of the self-expanding frame being Beta III titanium.

14. The filtering device of claim 13, further including means for maintaining the filter assembly in the unexpanded position until it is ready to be deployed into the expanded position.

15. An expandable frame for an embolic filtering device, comprising:

a first half frame adapted to move between an unexpanded position and an expanded position, the first half frame having a first control arm connected to a second control arm by a partial loop, the first half frame including Beta titanium; and

a second half frame adapted to move between an unexpanded position and an expanded position, the second half frame having a first control arm connected to a second control arm by a partial loop, the second half frame including Beta titanium;

wherein the partial loops of the first and second half frames cooperate to form a composite opening for coupling of a filtering element when placed in the expanded position.

16. The expandable frame of claim 15, wherein:

the Beta titanium of the first half frame is Beta III titanium; and

the Beta titanium of the second half frame is Beta III titanium.

17. An embolic filtering device, comprising:

an elongated member; and

a self-expanding frame, having,

a first half frame adapted to move between an unexpanded position and an expanded position, the first half frame having a first control arm connected to a second control arm by a partial loop, the first half frame including Beta titanium, and

a second half frame adapted to move between an unexpanded position and an expanded position, the second half frame having a first control arm connected to a second control arm by a partial loop, the second half frame including Beta titanium,

wherein the partial loops of the first and second half frames cooperate to form a composite opening;

a filtering element coupled to the partial loops of the first and second half frames; and

a filter support structure upon which the expandable filter assembly is mounted, the filter support structure having a lumen extending therethrough to receive the elongated member.

18. The embolic filtering device of claim 17, wherein:
the Beta titanium of the first half frame is Beta III titanium; and
the Beta titanium of the second half frame is Beta III titanium.

19. The embolic filtering device of claim 18, further including means for rotatably mounting the expandable filter assembly to the elongated member.

20. The embolic filtering device of claim 18, wherein the filter support structure is a coil.

21. An expandable frame for an embolic filtering device, comprising:
a first control arm having a distal end and a proximal end;
a second control arm having a distal end and a proximal end; and
a pair of partial loops connected to the first and second control arms near the distal ends of the first and second control arms, the partial loops being adapted to move between an unexpanded position and an expanded position, the partial loops cooperating to form a composite loop when placed in the expanded position, the partial loops being adapted for coupling of a filtering element;
wherein the expandable frame includes Beta titanium.

22. The expandable frame of claim 21, wherein the Beta titanium of the expandable frame is Beta III titanium.

23. The expandable frame of claim 22, wherein the frame includes strain distributing struts to increase the bendability of the frame.

24. The expandable frame of claim 23, wherein the strain distributing struts are located on the partial loops near the point of coupling to the distal ends of the first and second control arms.

25. The expandable frame of claim 23, wherein the strain distributing struts are formed on the frame and have a thinner width than the remainder of the strut forming the frame.

26. The expandable frame of claim 22, further including a second set of distal control arms coupled to the frame and extending distally away from the frame.

27. An embolic filtering system, comprising:

an expandable filter assembly including a self-expanding frame moveable between an expanded position and an unexpanded position, the expandable filter assembly being made of Beta titanium;

a filtering element coupled to and movable with the expandable filter; and

a restraining sheath having a distal end portion and a proximal end, the distal end portion of the restraining sheath being adapted to receive the expandable filter assembly for maintaining the filter assembly in the unexpanded position and being movable to expose the filter assembly.

28. The embolic filtering system of claim 27, wherein the Beta titanium of the expandable filter assembly is Beta III titanium.

29. An embolic filtering device, comprising:

a frame adapted to move between an unexpanded position and an expanded position, the frame being made of Beta titanium; and

a filter element coupled to the frame.

30. The embolic filtering device of claim 29, wherein the Beta titanium of the frame is Beta III titanium.

31. An elongated guide wire, comprising:

an elongated core having proximal and distal core sections; and

a flexible body disposed about and secured to the distal core section;

wherein the core includes Beta III titanium.

32. The guide wire of claim 31, wherein the guide wire core including the proximal and distal sections is uninterrupted and the proximal and distal sections include the Beta III titanium.

33. The guide wire of claim 31, wherein the distal section of the guide wire core includes Beta III titanium.

34. The guide wire of claim 33, wherein the distal section of the guide wire core includes a diameter smaller than the diameter of a proximal section of the guide wire core.

35. The guide wire of claim 34, wherein the flexible body includes at least one helical coil.

36. The guide wire of claim 31, wherein the proximal section of the guide wire core includes Beta III titanium.

37. The guide wire of claim 31, wherein the Beta III titanium core includes a shape which is heat set into the Beta III titanium core.

38. The guide wire of claim 31, further comprising a torque-transmitting tube joining the proximal and distal core sections together.